

# Rachel Elizabeth Abercrombie

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## ***Education:***

1987 - 1991 Ph.D. University of Reading and British Geological Survey, Edinburgh, U. K.  
1984 - 1987 B.A. Trinity Hall, Cambridge University, England

## ***Employment:***

2006 – Research Associate Professor, Boston University  
2004 – 2005 Associate Professor, Boston University (with Tenure)  
2001 – 2003 Assistant Professor, Boston University  
1998 – 2001 Research Associate, Harvard University  
1995 – 1998 Scientist, Institute of Geological and Nuclear Sciences, Wellington, New Zealand  
1994 – 1995 Associate Research Scientist, University of Southern California  
1991 – 1994 Research Associate, University of Southern California  
1993 – 1994 Four Month Post-doctoral Fellowship at University of Nevada, Reno  
July-Sept 1991 Technical Assistant at Fina Exploration Plc., Epsom, U. K.  
1987-1990 Research and Teaching Assistant, Reading University

## ***Awards:***

Visiting Research Fellowship at the Southern California Earthquake Center, 1991 – 1993.  
National Environmental Research Council CASE Studentship, 1987-1990.  
Royal Society of New Zealand Travel Award to attend Western Pacific AGU Meeting, Brisbane 1997.  
Kyoto University Travel Grant to visit DPRI, Kyoto University, sponsored by Prof. J. J. Mori, for 2 weeks in March 2013.

## ***Professional Activities:***

- Scientific Committee, European Centre for Geodynamics and Seismology Workshop, Luxembourg: Earthquake Source Physics on Various Scales, October 2012.
- Graduate Student Thesis Committee: P. Moyer, University of New Hampshire, 2012-
- Speaking to the media after large earthquakes
- Presenting earthquake activities at local middle and elementary schools.
- Member of the Richter Award Sub-Committee, Seismological Society of America, 2010-2012
- Member of Incorporated Institutions for Seismology (IRIS) Ad hoc committee, 2009. Prepared a White Paper discussing the acquisition of higher frequency data from the USArray as it moves east.
- Vice-President, Seismological Society of America, 2007-2009

- Member (adjunct) of Qualifying Examination Committee for PhD student at Tufts University (2007-2009), and University of New Hampshire (2012-).
- Board of Directors, Seismological Society of America, 2003-2005.
- SAFOD Downhole Monitoring Technical Advisory Panel, 2003-2008
- Co-convenor (with A. McGarr, USGS) of Special Session for Fall AGU Meeting 2003, on *The Energy Budget of the "Earthquake Machine"*
- Convened American Geophysical Union Chapman conference on "Radiated seismic energy and the physics of earthquakes", June 2005 Portland Maine, 140 attendees from 14 countries (co convenors: A. McGarr, USGS, and H. Kanamori, Caltech).
- Editor of American Geophysical Union Monograph entitled "Radiated energy and the physics of earthquake faulting", December 2006, co-editors A. McGarr, H. Kanamori, and G. Di Toro.
- Member, NSF Geophysics Panel, September 2002.
- Co-convenor (with K. Mayeda, LLNL) of Special Session at Fall AGU Meeting 2002, on *Radiated Seismic Energy*.
- Working Group Leader at Earthscope Meeting, October 2001. Co-author of Earthscope Scientific Targets Report.
- Co-convenor (with W. Ellsworth, USGS, H. Ito, GSJ, and P. Malin, Duke University) of International Workshop on *Borehole Instrumentation and Near-Source Seismology*, Tsukuba, Japan, 13-16 March 2001 (Funded by NSF, USGS and Japan).
- Associate Editor of *Journal of Geophysical Research*, 1999-2001.
- American Geophysical Union Fall Meeting Program Committee 2000-2001.
- Judge Outstanding Student Presentations (Seismology), Fall AGU 1999.
- Member of the American Geophysical Union, the Seismological Society of America and the New Zealand Geophysical Society (Council Member 1997-1998).
- Reviewer for *Nature*, *Science*, *Journal of Geophysical Research*, *Geophysical Research Letters*, *Geophysical Journal International*, *Bulletin of the Seismological Society of America*, *Tectonophysics*, and others.
- Reviewer for National Science Foundation and NEHRP Proposals, since 1994. Reviewer for Civilian Research and Development Foundation (since 2002). Reviewer for Broad Agency Announcement by the National Nuclear Security Administration & Air Force (NNSA-AFRL)
- Organised seminar series for the Royal Society of New Zealand in Wellington (1998), a Workshop for SCEC (1994), and also regular group meetings at GNS (New Zealand) and Harvard University.

### **University, College and Departmental Activities:**

- Invited speaker at BU's first Earthquake Preparedness Exercise at the BU Biosafety Lab, 19 December, 2013. Run by BU Director of Emergency Planning (S. Morash) for BU Incident Command Response Team (ICRT) and other University and City officials.
- Elected to the Faculty Council, May 2003-2006.
- Responsible for design, installation, maintenance and regular updating of Department computer earthquake display, 2003-2010.
- Summer Freshmen Advising, 2002, 2003

- Primary Academic Advisor to Class of 2004:
  - A. Azouz
  - C. Dong
  - H. Melanson
  - C. Miller
  - J. Saenz
  
- Graduate Student Thesis committees:
  - J. Stachnik: MA 2001
  - T. Moore: MA 2003
  - G. Rossi: MA Fall 2004
  - A. Ferris: PhD Spring 2007
  - C. Witkowski: PhD, incomplete
  - E. Syracuse: PhD 2008
  - L. Auger: PhD 2008
  - E. Raymond: PhD candidate
  - A. Hirsch: MA candidate
  
- Department Library Representative (2002-2005)
- Department Computer Committee (2001-2005)

**External Funding:**

Amount: \$140,364 (current)

Title: Collaborative Research: New Zealand as a Natural Laboratory to Investigate Earthquake Stress Variation

Agency: National Science Foundation EAR- 1113593

Period: 09/01/11 – 08/31/14

PI: R. E. Abercrombie

Amount: \$393,950 (current)

Title: Seismic Slip in Oceanic Lithosphere

Agency: National Science Foundation OCE-0850503

Period: 02/01/09 – 01/31/15

PI: R. E. Abercrombie

Amount: \$628,608.00

Title: Seismic Source Scaling and Discrimination in Diverse Tectonic Environments

Agency: Air Force Research Laboratories (Hanscom)

Period: 09/19/06 – 09/18/10

PI: R. E. Abercrombie (includes subcontracts to LLNL and Weston Geophysical)

Amount: \$48,389 (BU)

Title: Regional wave propagation in New England and New York: Collaborative Research with Boston University and Tufts University

Agency: NEHRP External Program (CEUS)

Period: 09/01/04 – 08/31/06

PI: R. E. Abercrombie and L. Baise (Tufts University)

Amount: \$14,429 (BU)

Title: Source scaling of Earthquakes in the Northeastern United States: Collaborative Research with Boston University and Columbia University

Agency: NEHRP External Program (CEUS)

Period: 11/1/2003-12/31/2005

PI: R. E. Abercrombie and W-Y. Kim (Columbia University)

Amount: \$10,000

Title: Combining High Resolution Earthquake Source Parameters and Earthquake Nucleation  
Agency: US Geological Survey via University of Southern California (Southern California Earthquake Center) PO *to be assigned*  
Period: 02/01/03 – 01/31/06  
PI: R. E. Abercrombie

Amount: \$147,349

Title: High resolution studies of the earthquake source  
Agency: National Science Foundation EAR-0126315  
Period: 01/01/02 – 12/31/06  
PI: R. E. Abercrombie

Amount: \$5,000

Title: Combining high resolution source parameters with high precision locations  
Agency: US Geological Survey via University of Southern California (Southern California Earthquake Center) PO #075031  
Period: 02/01/02 – 01/31/03  
PI: R. E. Abercrombie

Amount: \$61,866

Title: Site effects and seismic properties of the San Andreas fault zone using the Varian vertical array, Parkfield, California  
Agency: NEHRP 1434-95-G-2559  
Period: 01/01/95 – 12/31/95  
PI: R. E. Abercrombie

Amount: \$43,045

Title: Seismic Attenuation at High Frequencies in Southern California from Coda Waves Recorded at Depth at Cajon Pass, California  
Agency: National Science Foundation EAR-9418754  
Period: 07/15/95 – 12/31/96  
PI: R. E. Abercrombie

### ***Invited Presentations and Workshops:***

- Scientific Committee, European Centre for Geodynamics and Seismology Workshop 2012, Luxembourg, *“Earthquake Source Physics on Various Scales”*, (Invited Talk)
- British Geophysical Association conference, Burlington House, London “Scale Invariance and Scale Dependence in Earth Structure and Dynamics”, March 2006, *Are earthquakes scale invariant?* (Invited Talk)
- Fault and Rock Mechanics Workshop, SCEC, Oxnard, September 2003
- Fault and Rock Mechanics Workshop, SCEC, Oxnard, September 2002
- IASPEI International Summer School on “Structure and Tectonics of Active Convergent Margins”, Czech Republic, July 2002, *Seismicity and Dynamics of Subduction at the Sunda Arc: Three Unusual Earthquakes* (invited Talk).
- Japan - USA Workshop on Foreshocks and Rupture Initiation, Kyoto, 3-6 October 2000. *Earthquake Initiation and Source Processes at Small Magnitudes*
- 3<sup>rd</sup> Conference on Tectonic Problems of the San Andreas Fault System, September 2000, *Earthquake Source Complexity and Seismicity at Small Magnitudes*,

- Fluids and Faulting, Trans-Tasman Field Workshop, University of Otago, Dunedin, New Zealand, 20-25 October 1996.
- 7<sup>th</sup> International Symposium on the observation of Continental crust through drilling, Santa Fe, April 1994: *Earthquake seismology 2.5 km down the Cajon Pass scientific drillhole, southern California*.
- Invited (funded) participant to Workshop on *Developing a Science and Drilling Program to investigate the Chicxulub Multiring Impact Basin*, Puerto Vallarta, 13-14 November 1993.
- Early Workshops on the San Andreas Deep Drilling Project (now called SAFOD) 1992-1995.
- Invited Speaker: Fall AGU Meeting, 1992 concerning the nucleation of the Landers earthquake.
- Papers: Abercrombie 1996 and 1998 were invited contributions to Special Volumes.
- Invited Talks at various Institutions including:
  - University of Kyoto, Japan, March 2013
  - University of Texas, El Paso, November 2012
  - Institut de Physique du Globe de Paris, Paris, France, October 2012
  - University of New Hampshire, Durham, June 2012
  - Harvard University, Solid Earth Physics Seminar, March 2012
  - Cornell University, October 2009
  - Boston University, January 2005: *"The recent Sumatra mega-thrust earthquake and tsunami: a scientific overview of the causes and effects"*
  - U. Mass, Amherst, May 2003: *"How do Earthquakes Start?"*
  - Lamont-Doherty Earth Observatory, Columbia University, April 2003: *Observations of Small Earthquakes: Implications for Earthquake Nucleation and Rupture Dynamics*; February 2001: *Oceanic Transform Earthquakes: Slow or Deep?*
  - USGS Menlo Park, April 1993, 5 September 2000: *Oceanic Transform earthquakes: Slow or Deep?*
  - Cambridge University, England, March 2000
  - University of Liverpool, England, 15 March 2000.
  - Edinburgh University, Scotland, 1989, August 1994, April 1999, March 2000
  - Woods Hole Oceanographic Institute, December 1999: *Oceanic Transform Earthquakes: Slow or Deep?*, 28 February 2000: *Three Unusual Earthquakes off Sumatra and Java*.
  - Princeton University, 11 October 1999: *Oceanic Transform Earthquakes: Deep or Slow?*
  - Harvard University, 6 November 1998: *The enigma of the Arthurs Pass (New Zealand) earthquake*.
  - Royal Society of New Zealand, Wellington, 21 October 1997: *How do large earthquakes begin?*
  - University of California, Berkeley, 1995
  - University of Texas, Dallas, 1995
  - University of Southern California, 7 April 1995: *Deep ( $\leq 3$ km) Borehole Recording of Small Earthquakes in Southern California: Source Scaling and Near-Surface Effects*

- University of Memphis, 21 October 1994: *Deep ( $\leq 3\text{km}$ ) Borehole Recording of Small Earthquakes in Southern California: Source Scaling and Near-Surface Effects*
- Los Alamos National Laboratory, April 1994
- California Institute of Technology: 1992, 1994
- Ministry of Defense, Blacknest, England, September 1994.
- University College London, England, August 1994

### **Courses taught at Boston University:**

- ES561: *Mechanics of Earthquakes* Spring 2013, 7 students
- ES561: *Mechanics of Earthquakes* Fall 2005, 8 students
- ES360 *Geodynamics I* Spring 2005, 10 students
- ES660: *Geodynamics: Graduate level* Spring 2005, 4 students.
- ES360: *Geodynamics I* Spring 2004, 16 students
- ES505: *Plate Tectonics and Kinematics* Fall 2003, 9 students. Completely revised course.
- ES561: *Mechanics of Earthquakes* Spring 2003, 4 students. Developed new course
- ES360: *Geodynamics I* Fall 2002, 15 students
- ES660: *Geodynamics: Graduate level* Fall 2002, 4 students. Developed new course
- ES587: *Seminar in Earth Sciences* Fall 2002, 2
- ES360: *Geodynamics I* Fall 2001 (co-taught with Prof. G. Abers) 17 students

### **Prior Teaching Experience:**

- At Harvard University (1998-2001) I assisted graduate students, and lectured in undergraduate classes:
  - EPS 6. Introduction to Environmental Science: The Solid Earth, 2000 (~ 30 students)
  - A-43: Environmental Risks and Disasters, 1999 (over 100 students).
- I supervised summer students and advised graduate students and less experienced graduate staff at IGNS, New Zealand.
- At the University of Southern California (1991-1995) I advised:
  - two graduate students: M. Forrest (1997) and D. Adams (1997). I was on the thesis committee for Forrest, and partially funded Adams (Adams & Abercrombie, 1998).
  - two SCEC Summer Interns (H. Hodgetts, 1995; M. Ragan, 1994).
  - Three undergraduate work study students
- Attended SCEC sponsored Workshop for Science and Education Faculty: *Teaching an Earthquake Course with the Punch of M8*, California State University, Fullerton, 6 May 1995.
- Reading University, England (1987-1991):
  - Teaching fellow for classes in Mineralogy, Structural Geology and Geophysics
  - Field Trip leader for Open University Summer field trips 1988.

**Students:**

- Kasey Aderhold, Primary Advisor, PhD – started September 2010
- Co-advising 2 PhD students at UTEP with Prof. D. Doser, 2012-
- Gisela Viegas Fernandes, Primary Advisor, graduated PhD 2009
- Maya El-Hariri, Primary Advisor, graduated MA 2008.
- Katherine Murphy, Primary Advisor, graduated MA 2006
- Jelena Tomic, Primary Advisor, graduated MA June 2004
- Co-advised Karen Felzer at Harvard University, PhD Thesis Committee April 2003.

**Post-Doctoral Fellows:**

- Dr. Yakuji Yamada, 2005-2007, Japanese Science and Technology Fellowship.
- Dr. Eleanor Sonley, January-December 2005, NSF and Boston University funding to work on source parameters of Parkfield (California) earthquakes

**Field Experience:**

- Tested broadband seismometer in basement at Boston for teaching/research with undergraduates.
- Deployed broadband seismometers on Mt Ruapehu, erupting volcano, New Zealand, 1995-1996
- Installed, operated and Retrieved seismometers at the Cajon Pass borehole, depths of up to 3 km, 1992-1995.
- Site selection and Seismometer Deployment for pilot South Island Geophysical Transect (SIGHT) project, Southern Alps New Zealand, 1994 (International project partly funded by NSF).
- Mojave PmP experiment, 1994
- Maintenance visit to Los Angeles Network Station on Santa Barbara Island, 1992.

**Advisors:**

- PhD. Ian Main, Paul Burton and Alan Douglas
- Post Doctoral: Peter Leary, Jim Brune

**Publications:**

Underline indicates student and Postdoctoral advisees.

**Manuscripts submitted for Peer Review:**

Viegas, G. M., **R. E. Abercrombie**, and K. Mayeda, 2010, Coda derived source parameters in Eastern North America, Eastern Section Seism. Res. Let.

**Peer Reviewed Literature:**

**Abercrombie, R. E.** 2013, Comparison of direct and coda wave stress drop measurements for the Wells, Nevada, earthquake sequence, *J. Geophys. Res. Solid Earth*, 118, doi:10.1029/2012JB009638.

- Chen X., Shearer P. M., and **Abercrombie R. E.**, 2012, Spatial migration of earthquakes within seismic clusters in Southern California: Evidence for fluid diffusion, *J. Geophys. Res.*, 117, B04301, doi:10.1029/2011JB008973.
- Viegas, G. M., L. G. Baise, and **R. E. Abercrombie**, 2010, Regional wave propagation in New England and New York, *Bull. Seism. Soc. Am.*, 100, 2196-2218, DOI: 10.1785/0120090223.
- Viegas, G. M., **R. E. Abercrombie**, and W.-Y. Kim, 2010. The 2002 M5 Au Sable Forks, NY, earthquake sequence: source scaling relationships and energy budget, *J. Geophys. Res.*, 115, B07310, doi:10.1029/2009JB006799.
- El Hariri, M., **R. E. Abercrombie**, C. A. Rowe, and A. F. do Nascimento, 2010. The Role of Fluids in Triggering Earthquakes: Observations From Reservoir Induced Seismicity in Brazil, *Geophys. J. Int.*, 181, 1566-1574.
- Tomic, J., **R. E. Abercrombie**, and Do Nascimento, A., 2009, Source parameters and rupture velocity of small  $M \leq 2.1$  reservoir induced earthquakes, *Geophys. J. Int.*, 179(2), 1013-1023, doi:10.1111/j.1365-246X.2009.04233.x.
- Yamada, T., J. J. Mori, S. Ide, **R. E. Abercrombie**, H. Kawakata, M. Nakatani, Y. Iio, and H. Ogasawara 2007, Stress drops and radiated seismic energies of microearthquakes in a South African gold mine, *J. Geophys. Res.*, 112, B03305, doi:10.1029/2006JB004553.
- Sonley, E., and **R. E. Abercrombie**, 2006, Effects of methods of attenuation correction on source parameter determination, *American Geophysical Union Monograph, EARTHQUAKES Radiated energy and the physics of faulting*, eds. **Abercrombie**, McGarr, Di Toro and Kanamori.
- Shipton, Z., J. Evans, **R. E. Abercrombie**, and E. Brodsky, 2006, The Missing Sinks: Slip Localization in Faults, Fault Thickness, and Seismic Energy Budgets, *American Geophysical Union Monograph, EARTHQUAKES Radiated energy and the physics of faulting*, eds. **Abercrombie**, McGarr, Di Toro and Kanamori.
- Antolik, M., **R. E. Abercrombie**, Pan, and G. Ekström, 2006, Rupture characteristics of the 2003  $M_w 7.6$  Mid-Indian ocean earthquake, *J. Geophys. Res.*, 111, B04302, doi:10.1029/2005JB003785.
- Abercrombie, R. E.** and Rice, J. R., 2005, Can observations of earthquake scaling constrain slip weakening?, *Geophys. J. Int.*, 162, 406-424..
- Antolik, M., **R. E. Abercrombie**, and G. Ekström, 2004, The 14 November, 2001 Kokoxili (Kunlunshan), Tibet earthquake: rupture transfer through a large extensional step-over, *Bull. Seism. Soc. Am.*, 94, 1173-1194.
- Felzer, K. R., **R. E. Abercrombie**, and G. Ekström, 2004, A common origin for aftershocks, foreshocks, and multiplets, *Bull. Seism. Soc. Am.*, 94, 88-99.
- Abercrombie, R. E.** and Ekström, G., 2003, A reassessment of the rupture characteristics of oceanic transform faults, *J. Geophys. Res.*, 108, 10.1029/2001JB000814.
- Abercrombie, R. E.**, M. A. Antolik, and G. Ekström, 2003, The June 2000  $M_w 7.9$  earthquakes south of Sumatra: deformation in the India-Australia plate, *J. Geophys. Res.*, 108, 10.1029/2001JB000674
- Felzer, K. R., **R. E. Abercrombie**, and G. Ekström, 2003, Secondary Aftershocks and their importance for aftershock prediction, *Bull. Seism. Soc. Am.*, 93, 1433-1448..
- Mori, J. J., **Abercrombie, R. E.**, and Kanamori, H., 2003, Stress drops and radiated energies of the Northridge aftershocks, *J. Geophys. Res.*, 108, 10.1029/2000JB000474, 2003.
- Felzer, K. R., T. W. Becker, **R. E. Abercrombie**, G. Ekström, and J. R. Rice, 2002, Triggering of the 1999  $M_w 7.1$  Hector Mine earthquake by aftershocks of the 1992  $M_w 7.3$  Landers earthquake, *J. Geophys. Res.*, 107, 2190, doi:10.1029/2001JB000911.
- Abercrombie, R. E.** and Ekström, G., 2001, Earthquake slip on oceanic transform faults, *Nature*, 410, 74-77.
- Abercrombie, R. E.**, Antolik, M. A., Felzer, K. R., and Ekström, G., 2001, The 1994 Java earthquake: slip over a subducting seamount, *J. Geophys. Res.*, 106, 6595-6607.



- Abercrombie, R. E.**, 2000, Crustal Attenuation and Site Effects at Parkfield, California, *J. Geophys. Res.*, *105*, 6277-6286.
- Abercrombie, R. E.**, Webb, T. H., Robinson, R., McGinty, P. J., Mori, J. J. and Beavan, J., 2000, The enigma of the Arthur's Pass, New Zealand, earthquake 1: reconciling a variety of data for an unusual earthquake sequence, *J. Geophys. Res.*, *105*, 16119-16137.
- Abercrombie, R. E.**, Bannister, S., Pancha, A., Webb, T. H. and Mori, J., 2000, Determination of fault planes in a complex aftershock sequence using two-dimensional slip inversion, *Geophys. J. Int.*, *146*, 134-142.
- Gledhill, K., Robinson, R., Webb, T. H., **Abercrombie, R. E.**, Beavan, J., Cousins, J., and Eberhart-Phillips, D., 2000, The  $M_w$  6.2, Cass, New Zealand, earthquake of 24 November 1995: Reverse faulting in a strike slip regime, *New Zealand J. Geol. And Geophys.*, *43*, 255-269.
- Abercrombie, R. E.**, 1998, A summary of attenuation measurements from borehole recordings of earthquakes: the 10 Hz transition problem, *Pure Appl. Geophys.*, *153*, 475-487.
- Abercrombie, R. E.** and Benites, R. A., 1998, Strong motion modelling of the 1993 Tikokino earthquake, southern Hawkes Bay, New Zealand, *New Zealand J. Geol. And Geophys.*, *41*, 259-270.
- Adams, D. A. and **Abercrombie, R. E.**, 1998, Seismic attenuation at high frequencies in southern California from coda waves recorded at a range of depths, *J. Geophys. Res.*, *103*, 24257-24270.
- Abercrombie, R. E.**, 1997, Near surface attenuation and site effects from comparison of surface and deep borehole recordings, *Bull. Seism. Soc. Am.*, *87*, 731-744.
- Mori, J. J. and **Abercrombie, R. E.**, 1997, Depth dependence of earthquake frequency-magnitude distributions in California: implications for rupture initiation, *J. Geophys. Res.*, *102*, 15081-15090.
- Liu, Y., Crampin, S. and **Abercrombie, R. E.**, 1997, Shear-wave anisotropy and the stress field from borehole recordings at 2.5 km depth at Cajon Pass, *Geophys. J. Int.*, *129*, 439-449.
- Abercrombie, R. E.**, 1996, The magnitude-frequency distribution of earthquakes recorded with deep seismometers at Cajon Pass, Southern California, *Tectonophys.*, *261*, 1-7.
- Abercrombie, R. E.** and Mori, J., 1996, Occurrence patterns of foreshocks to large earthquakes in the western United States, *Nature*, *381*, 303-307.
- Manov, D. V., **Abercrombie, R. E.** and Leary, P. C., 1996, Reliable and economical high temperature deep borehole seismic recording, *Bull. Seism. Soc. Am.*, *86*, 204-211.
- Abercrombie, R. E.**, 1995a, Earthquake source scaling relationships from -1 to 5  $M_L$ , using seismograms recorded at 2.5 km depth, *J. Geophys. Res.*, *100*, 24015-24036.
- Abercrombie, R. E.**, 1995b, Earthquake locations using single-station deep borehole recordings: implications for microseismicity on the San Andreas fault in southern California, *J. Geophys. Res.*, *100*, 24003-24014.
- Abercrombie, R. E.** Main, I. G., Douglas, A. and Burton, P. W., 1995, The nucleation and rupture process of the 1981 Gulf of Corinth earthquakes from deconvolved broadband data, *Geophys. J. Int.*, *120*, 393-405.
- Abercrombie, R. E.**, Agnew, D. C. and Wyatt, F. K., 1995, Testing a model of earthquake nucleation, *Bull. Seism. Soc. Am.*, *85*, 1873-1878.
- Abercrombie, R. E.**, 1994a, Regional bias in estimates of earthquake  $M_S$  due to surface wave path effects, *Bull. Seism. Soc. Am.*, *84*, 377-382.
- Abercrombie, R. E.** and Mori, J., 1994, Local observations of the onset of a large earthquake: 28 June 1992, Landers, California, *Bull. Seism. Soc. Am.*, *84*, 725-734.
- Abercrombie, R. E.** and Brune, J. N., 1994, Evidence for a constant  $b$ -value in the southern San Andreas, San Jacinto and San Miguel fault zones, and at the Long Valley caldera, California, *Geophys. Res. Lett.*, *21*, 1647-1650.
- Leary, P. C. and **Abercrombie, R. E.**, 1994a, Frequency dependent crustal scattering and absorption at 5 - 160 Hz from coda decay observed at 2.5 km depth, *Geophys. Res. Lett.*, *21*, 971-974.
- Leary, P. C. and **Abercrombie, R. E.**, 1994b, Fractal fracture scattering origin of S-wave coda: spectral evidence from recordings at 2.5 km, *Geophys. Res. Lett.*, *21*, 1683-1686.

**Abercrombie, R. E.** and Leary, P. C., 1993, Source parameters of small earthquakes recorded at 2.5 km depth, Cajon Pass, southern California: implications for earthquake scaling, *Geophys. Res. Lett.*, 20, 1511-1514.

**Abercrombie, R. E.**, 1991, Earthquake rupture dynamics and neotectonics of the Aegean area, *Ph.D. Thesis, University of Reading*.

### Monographs:

GEOPHYSICAL MONOGRAPH 170: *EARTHQUAKES Radiated Energy and the Physics of Faulting*, **R. E. Abercrombie**, A. McGarr, G. Di Toro, H. Kanamori, December 2006.

### Invited Articles, Reports and Conference Proceedings:

**Abercrombie, R. E.**, K. Mayeda, W. Walter, G. Viegas, and R. Gök, 2009, Seismic Source Scaling and Discrimination in Diverse Tectonic Environments, *Proceedings from the 2009 Monitoring Research Review, Ground-based Nuclear Monitoring Technologies*.

**Abercrombie, R. E.**, K. Mayeda, W. Walter, G. Viegas, and K. Murphy, 2008, Seismic Source Scaling and Discrimination in Diverse Tectonic Environments, *Proceedings from the 2008 Monitoring Research Review, Ground-based Nuclear Monitoring Technologies*.

**Abercrombie, R. E.**, K. Mayeda, W. Walter, G. Viegas, and K. Murphy, 2007, Seismic Source Scaling and Discrimination in Diverse Tectonic Environments, 3-1, *Proceedings from the 2007 Monitoring Research Review, Ground-based Nuclear Monitoring Technologies*.

**Abercrombie, R. E.**, The start of something big?, 2005, *Nature* 438, 171-173, invited *News and Views* McGarr, A., **R. E. Abercrombie**, and H. Kanamori, 2005. Radiated energy and the physics of earthquake faulting, *Eos, Trans. AGU*, 86, 447.

**Abercrombie, R. E.**, 2004, Earthquakes, Highlights: Discoveries in the Earth Sciences, *Geotimes*, July 2004 (Invited Review article).

Ellsworth, B., H. Ito, P. Malin, and **R. E. Abercrombie**, 2001. In Jules Verne's Footsteps: Seismology in the Source, *Eos, Trans. AGU*, 82, 333, 339.

**Abercrombie, R. E.**, 2000, Earthquake source complexity and seismicity at small magnitudes, *Proceedings of the 3rd Conference on Tectonic Problems of the San Andreas Fault System*, September 6-8, 2000 Stanford University.

**Abercrombie, R. E.**, 1994b, Earthquake seismology 2.5 km down the Cajon Pass scientific drillhole, southern California, *Proc. 7th Int. Symposium on the Observation of the Continental Crust through Drilling*, 221-224.

Banerdt, W. B., **Abercrombie, R. E.**, Keddie, S., Mizutani, H., Nagihara, S., Nakamura, Y. and Pike, W. T., 1995, Planetary Interiors, in Planetary Surface Instruments Workshop, Eds. C. Meyer, A. Treiman and T. Kostiuk, *Lunar and Planetary Institute Technical Report 95-05*, 41-50.

### Recent Conference Abstracts

Fry, B.; M. C. Gerstenberger, M. C.; **Abercrombie, R. E.**, M. Reyners and D. Eberhart-Phillips, 2013, Strain rates, stress markers and earthquake clustering (*Invited*), Abstract NG13A-03, *presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec*.

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